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Case Report

A Rare Presentation of Primary Renal Lymphoma Simulating Renal Cell Carcinoma

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ABSTRACT

Primary renal lymphoma is very rare disease which is mimicking renal cell carcinoma. In the present study, a 64 year old female patient presented with right renal mass clinically diagnosed as a renal cell carcinoma. Right radical nephrectomy was done, sent for histopathological examination and diagnosed as a Primary renal lymphoma.

Key words: Primary renal lymphoma, renal cell carcinoma.

INTRODUCTION

Kidney is a most common site of extranodal lymphomas apart from nodal lymphoma. [1] Primary renal lymphoma comprises of 0.7% of extranodal lymphoma. [2] Primary renal lymphomas are defined as lymphomas arising in the renal parenchyma, but not invasion from an adjacent lymphomatous mass. Primary renal lymphoma is clinically and radiologically mimicking renal cell carcinoma. [3] Prognosis of primary renal lymphoma is very poor with median survival of less than a year.

CASE REPORT

A 64 year old woman presented with flank pain, and palpable mass in the right hypochondrium. Peripheral lymph nodes were not palpable. Complete blood picture, renal function tests and liver function tests were normal except for an elevated serum creatinine. Computerized tomography (CT) abdomen reveal a 6x4 cm solid, homogenous and mildly enhancing mass occupying upper pole of right kidney. Right radical nephrectomy was done and sent for department of Pathology, Narayana Medical College and Hospital, Nellore, Andhra Pradesh, India. We received right nephrectomy specimen of size 11x7x3 cm. Cut section showed grey white homogenous mass of size 6x4x2 cm located at the upper pole of right kidney (Fig.1). Histopathological examination of right nephrectomy specimen showed renal parenchyma along with lesion having nodular pattern of monotonous population of lymphoid cells having prominent nucleoli on a scant cytoplasm. Renal tubules are spared from tumor tissue (Fig.2 & Fig.3). On immunohistochemistry, tumor cells were positive for Leucocyte common antigen (Fig.4).

Fig. 1 - C/s shows grey white homogenous mass of size 6x4x2 cm located at the upper pole of the right kidney

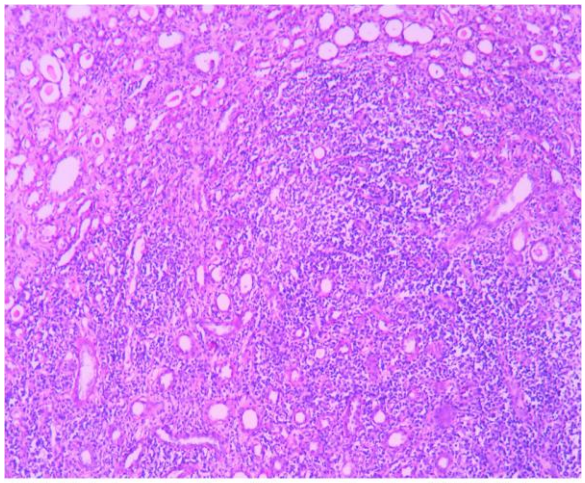

Fig.2 - Photomicroscopic picture of Primary renal lymphoma (H&E, X100) showing tumor cells infiltrating renal parenchyma

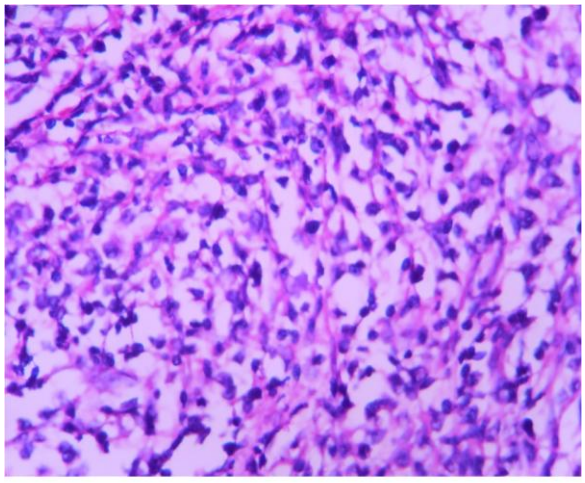

Fig.3 - Photomicroscopic picture of Primary renal lymphoma (H&E, X400)

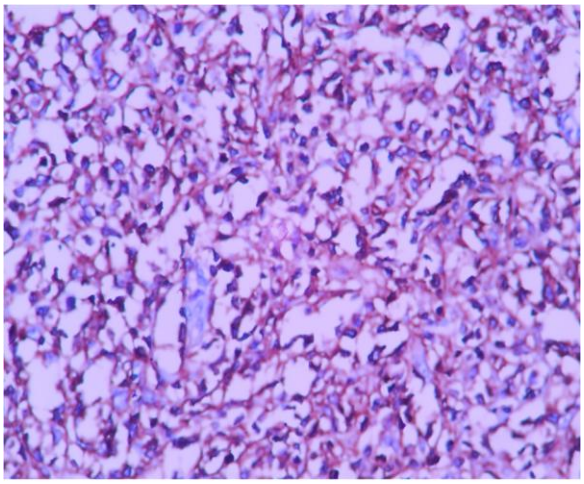

Fig.4 - Immunohistochemistry positive for Leucocyte common antigen (LCA, X400)

DISCUSSION

Primary renal lymphoma (primary renal lymphoma) is defined as lymphoma arising in the renal parenchyma and not resulting from the invasion of an adjacent lymphomatous mass. [4] Primary renal lymphoma incidence is 0.7% of extranodal lymphoma. Secondary renal lymphoma was more common than primary renal lymphoma (30%-60%).

Stallone et al (2000) reviewed 29 cases of primary renal lymphoma and stated the criteria for diagnosis of primary renal lymphoma.

1. Lymphomatous renal infiltration.
2. Non-obstructive unilateral or bilateral kidney enlargement.
3. No extra renal localization at the time of diagnosis. [5]

The etiology of primary renal lymphoma is debated since kidneys are devoid of lymphatic tissue. Proposed pathogenetic mechanisms are

1. Chronic inflammation leading to recruitment of lymphocytes in renal parenchyma and later oncogenic change occurs. [6]
2. From the renal capsule which is rich in lymphatics and then penetrates renal parenchyma. [7]
3. Lymphomatous process in the peri renal fatty tissue with secondary involvement of kidney. [8]

Primary renal lymphoma usually occur in middle aged with slight male predominance but in our case patient age was 64 years old female. Common presentation is flank pain, abdominal mass and acute renal failure. Hematuria, hypertension and constitutional symptoms like pain and fever can also occur. In our case, all laboratory values were normal except for an elevated serum creatinine.

Common histological types of primary renal non-Hodgkin's lymphoma are

1. Diffuse large B cell lymphoma.
2. Extranodal marginal zone B cell lymphoma of mucosa associated tissue (MALT lymphoma).

On ultrasonography, primary renal lymphoma appears hypovascular, hypo or anecrotic mass but renal cell carcinoma appears as hypervascular mass. [6] On CT scan showing homogenous post contrast attenuation points favour primary renal lymphoma, where as presence of calcification, renal vein thrombosis and mass effect on renal vessels and pelvicalyceal system favours renal cell carcinoma. [9] On magnetic resonance imaging (MRI), primary renal lymphoma exhibits lower signal intensity than normal cortex. [10] On fluorodeoxy-glucose positron emission tomography (FDG-PET), in primary renal lymphoma, FDG up take is much higher than renal cell carcinoma. [11] Renal biopsy shows sensitivity of 70-92%. [12]

Primary renal lymphoma should be differentiated from other tumors like

1. Renal cell carcinoma (Cytokeratin positive).
2. Small cell carcinoma (Cytokeratin positive).
3. Primitive neuroectodermal tumor (Cytokeratin positive).
4. Neuroblastoma (NSE, S100 positive).

Primary renal lymphoma is positive on immunohistochemistry with leucocyte common antigen (LCA) where as other tumor cells are negative.

In primary renal lymphoma, systemic chemotherapy with or without radiotherapy is treatment of choice. Primary renal lymphoma disseminates rapidly and 75% of patients die within a year of diagnosis.

CONCLUSION

Primary renal lymphoma is rare disease and should be considered in the differential diagnosis of renal mass. CT/MRI and FDG-PET scan along biopsy are useful for diagnosis. Preoperative diagnosis can prevent unnecessary nephrectomy as chemotherapy is the primary modality of treatment.

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